

1           1.       A communications device comprising:  
2            a transmitter that converts electrical representations of aural signals into  
3            signals for transmission over a medium;  
4            a receiver that receives communication signals for conversion into  
5            representations of aural signals;  
6            a touch-screen display comprising icons representing numbers that are used to  
7           enter at least a number in response to a contact area, on the display, over a particular  
8           icon to be entered; and  
9            a controller, coupled to the transmitter, the receiver, and the touch-screen  
10          display, the controller controlling the communications device and comprising an  
11          apparatus that generates the icons representing numbers for display on the touch-  
12          screen display, the controller additionally comprising an apparatus that generates an  
13          accumulated telephone number in response to the particular icons contacted on the  
14          touch-screen display.

1           2.       The communications device of claim 1 wherein the controller is a  
2          microprocessor.

1           3.       The communications device of claim 1 wherein the medium for  
2          transmission is a wireless channel.

1           4.       The communications device of claim 1 and further including a  
2          microphone for generating, from speech, electrical representations of aural signals for  
3          transmission.

1           5.       The communications device of claim 1 and further including a speaker  
2          for generating aural signals from received electrical representations of aural signals.

1           6.       The communications device of claim 1 wherein the communications  
2          device comprises a telephone and a personal digital assistant.

1           7.     The communications device of claim 6 wherein a telephone mode of  
2 operation is selected by contact of an icon, generated by the controller, representing  
3 the telephone mode.

1           8.     The communications device of claim 6 wherein a personal digital  
2 assistant mode of operation is selected by contact of an icon, generated by the  
3 controller, representing the personal digital assistant mode.

1           9.     The communications device of claim 1 and further comprising:  
2           a headset comprising:  
3           a speaker for generating aural signals from received electrical representations  
4 of aural signals;  
5           a microphone for generating, from speech, electrical representations of aural  
6 signals for transmission; and  
7           a low power transceiver that couples the headset to the communications  
8 device.

1           10.    A wireless radiotelephone that communicates wireless signals with a  
2 base station, the wireless radiotelephone having a personal digital assistant mode and  
3 a communications mode, the wireless radiotelephone comprising:  
4           a transmitter that converts electrical representations of aural signals into  
5 communication signals for transmission over a wireless channel to the base station;  
6           a receiver that receives wireless signals from the base station for conversion  
7 into received electrical representations of aural signals;  
8           a touch-screen display comprising icons representing numbers that are used to  
9 enter a number in response to a contact, on the display, over a particular icon to be  
10 entered; and  
11          a controller, coupled to the transmitter, the receiver, and the touch-screen  
12 display, the controller controlling operation of the communications device and  
13 comprising an apparatus that generates the icons representing numbers for display on  
14 the touch-screen display, the controller additionally comprising an apparatus that  
15 generates and displays an accumulated telephone number in response to the particular

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16 icons contacted on the touch-screen display.

1        11. The wireless radiotelephone of claim 10 wherein the wireless channel  
2 is a code division multiple access air interface channel.

1        12. The wireless radiotelephone of claim 10 and further comprising:  
2            a headset comprising:  
3              a speaker for generating aural signals from the received electrical  
4 representations of aural signals;  
5              a microphone for generating, from speech, the electrical representations of  
6 aural signals for transmission; and  
7              a low power wireless transceiver that couples the headset to the wireless  
8 radiotelephone.

1        13. The wireless radiotelephone of claim 10 wherein the personal digital  
2 assistant mode is selected by contact of an icon, generated by the controller,  
3 representing the personal digital assistant mode.

1        14. The wireless radiotelephone of claim 10 wherein the telephone mode is  
2 selected by contact of an icon, generated by the controller, representing the telephone  
3 mode.

1        15. A method for communication by a buttonless communications device  
2 having a telephone mode, the method comprising the steps of:  
3            generating a plurality of number icons;  
4            displaying the plurality of number icons on a touchscreen display; and  
5            generating a telephone number in response to which particular icons are  
6 selected by contact with the touchscreen display.

1        16. The method of claim 15 and further comprising the steps of:  
2            generating an icon representing the telephone mode;  
3            displaying the telephone mode icon on the touchscreen display; and

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4           initiating the telephone mode in response to contact with the touchscreen  
5       display that corresponds with the telephone mode icon.

1           17.   The method of claim 15 and further comprising the steps of:  
2       generating an icon representing a personal digital assistant mode;  
3       displaying the personal digital assistant mode icon on the touchscreen display;  
4       and

5           initiating the personal digital assistant mode in response to contact with the  
6       touchscreen display that corresponds with the personal digital assistant mode icon.

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1           18.   The method of claim 15 and further including the step of transmitting  
2       the telephone number to a central switch for dialing.

1           19.   The method of claim 15 and further including the steps of:  
2       the buttonless communications device receiving an incoming call; and  
3       indicating the incoming call by an alert indication.

1           20.   The method of claim 19 wherein the alert indication is an aural tone.

1           21.   The method of claim 19 and further including the step of automatically  
2       switching to the telephone mode upon receipt of the incoming call.

1           22.   The method of claim 15 and further including the steps of:  
2       switching to a telephone book mode;  
3       finding a desired telephone number for calling; and  
4       initiating a telephone call by contact with the desired telephone number.

1           23.   A communications device that transmits and receives communication  
2       signals, the communications device comprising:  
3           a tactile response, touch-screen display comprising dynamically activated  
4       tactile elements; and  
5           a controller, coupled to the tactile response, touch-screen display, the

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6 controller controlling operation of the communications device including dynamically  
7 activating the tactile elements, the controller comprising means to generate icons  
8 representing data for display on the touch-screen display.

1           24. The communications device of claim 23 and further comprising:  
2            a transmitter that converts electrical representations of aural signals into  
3 communication signals for transmission over a medium; and  
4            a receiver that receives communication signals for conversion into received  
5 electrical representations of aural signals.

1           25. The communications device of claim 23 wherein the tactile response,  
2 touchscreen display is comprised of a matrix of substantially closely spaced tactile  
3 elements.

1           26. The communications device of claim 25 wherein the tactile elements  
2 are activated by electrically addressing a desired tactile element.

1           27. The communications device of claim 25 wherein the tactile elements  
2 are activated by addressing a desired tactile element utilizing a fluid controlled by the  
3 controller.

1           28. The communications device of claim 23 wherein the controller has  
2 means for forming a numeric keypad by activating a plurality of the tactile elements  
3 situated over number icons generated on the touchscreen display.

1           29. A method for communication by a buttonless communications device  
2 comprising a tactile element, touchscreen display, the method comprising the steps of:  
3            generating a plurality of data icons on the touchscreen display;  
4            activating a sufficient quantity of tactile elements over each of the plurality of  
5 data icons to provide a tactile response to touching a data icon; and  
6            generating a telephone number in response to which particular data icons are  
7 selected by contact with the touchscreen display.

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1           30.   The method of claim 29 and further including the step of displaying the  
2   telephone number generated by the selection of particular data icons.

1           31.   The method of claim 29 and further including the step transmitting the  
2   telephone number to a central switch in order to call the telephone number.

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